IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) A process for recognition and tracking of objects in image data relating to moving scenes, wherein a correspondence analysis is carried out in separate chronologically sequential image data sets in order to identify within two image data sets i(20) and j(21) image points (pixels) u_iv_i u_jv_j corresponding with each other, said correspondence analysis comprising:

in a first step, transforming the image data set i with a signature operator whereby ~~in such a manner, that~~ for each pixel u_iv_i a signature string (27) is computed and recorded in a signature table (22) together with the pixel coordinates[[,]] ;

in a subsequent step, transforming each pixel u_jv_j of the other image data set j using the same signature operator, whereupon the resulting signature strings are recorded together with the respective pixel coordinates in an additional signature table (23) [[,]] ;

checking the entries in the two signature tables (22, 23) with respect to whether signature strings exist which can be found in both tables (22, 23);

~~and in these cases,~~ for corresponding signature strings found on both tables (22, 23), generating a correspondence hypothesis (25) for the coordinates associated with the signature strings (27) [[,]] with the initial presumption that when corresponding signature strings (27) found on both signature tables (22, 23) the respective image points of the image pairs correspond to images of the same object or part thereof; ~~and~~

storing the correspondence hypothesis (25) in a hypothesis list (26) for further processing.

2. (currently amended) The [[A]] process according to Claim 1, wherein a census operator is employed as the signature operator, which corresponds to a non-linear transformation of the image data (20, 21) surrounding an image point.

3. (currently amended) The [[A]] process according to Claim 1, wherein the signature tables (22, 23) are organized in the form of a hash table.

4. (currently amended) The [[A]] process according to Claim 1, further comprising:

examining, prior to the recording of a signature string (27) with its associated pixel coordinates in a signature table (22, 23), whether a signature string (27) corresponding to the signature string has already been recorded in the table[[,]] ; and

~~whereupon~~ in the cases in which a corresponding signature string (27) has already been recorded, the newest signature string is not recorded, but rather only the pixel coordinates associated therewith are added as supplemental pixel coordinates to the already existing table entry of the corresponding signature string.

5. (currently amended) The [[A]] process according to Claim 1, further comprising accessing a memory, in which in particular applications-specific signature strings are recorded, of which, upon their occurrence, it can be assumed that pixels associated with such a signature string (27) need not be taken into consideration during the correspondence analysis, and prior to the recording of a signature string (27) with its associated pixel coordinates in a signature table (22, 23), checking this with respect to whether it corresponds with a signature string already recorded in this memory, whereupon in this case, the signature string (27) and its associated pixel coordinates are not recorded or entered in the signature table (22, 23).

6. (currently amended) The [[A]] process according to Claim 1, wherein, prior to the generation of the correspondence hypothesis, the entry of the signature string (27) in the signature tables (22, 23) is checked with regard to whether a signature string occurs frequently in one of the signature tables (22, 23), whereupon in this case, the relevant signature string (27) is not considered for a generation of a correspondence hypothesis.

7. (currently amended) The [[A]] process according to Claim 1, wherein prior to the generation of the correspondence hypothesis of corresponding signature strings appearing in both signature tables (22, 23), supplementally the image data and/or image recording situation relevant

parameters are taken into consideration, and that a correspondence hypothesis is generated only when these supplementally to be considered parameters of the two individual image points taken into consideration in the correspondence analysis do not deviate beyond a predetermined value.

8. (currently amended) The [[A]] process according to Claim 7, wherein the light intensity of the individual image points describes one of the supplementally to be considered parameters.

9. (currently amended) The [[A]] process according to Claims 7 or 8, wherein one of the supplementally to be considered parameters is the pixel coordinates of the image points with corresponding signature strings (27).

10. (currently amended) The [[A]] process according to Claim 9, wherein it is herein supplementally taken into consideration whether the relevant image points are located in the center or on the edge area of the image described by the image data i (20) or j (21), wherein in the case of image data which are located in the edge area of the image data set (20, 21) larger deviations of the pixel coordinates can be permitted.

11. (currently amended) A device for correspondence analysis in image data sets in order to identify within two image data sets i j image points (pixels) u_iv_i and u_jv_j corresponding to each other, wherein the device includes

a signature operator, by means of which both the image data set i (20) as well as the image data set j (21) are transformed in such a manner, that for each of the pixels u_iv_i and u_jv_j a signature string (27) is computed,

~~wherein the device further includes~~ a memory unit, which is so designed, that it is physically or virtually divided into two memory areas, which respectively include one of the signature tables (22, 23) associated with one of the image data sets i j, in which the signature strings (27) determined by means of the signature operator can be stored with their associated pixel coordinates[[,]] ; and

~~wherein the device includes~~, downstream of the memory unit, a device for generation of correspondence hypothesis (25) associated with the signature strings (27), which is provided with a memory (26) for recording these corresponding hypothesis in the form of a hypothesis list.

12. (currently amended) The [[A]] device according to Claim 11, wherein the signature operator is in communication with a memory unit, in which in particular application-specific signature strings can be recorded, from the occurrence of which it can be presumed that the pixel associated with one such signature string (27) need not be taken into consideration in the correspondence analysis, wherein upon the existence of one such signature string (27) a transfer of the signature string into the signature table (27 is prevented.

13. (currently amended) The process as in claim 1, wherein the ~~Use of the process or the device according to one of the preceding claims for~~ correspondence analysis is applied to ~~in~~ the computation of ~~the~~ optical flow within a sequence of camera image data.

14. (currently amended) The [[A]] process as in claim 1, wherein said process is used for correspondence analysis within an image pair in stereo image processing.

15. (currently amended) A process for a correspondence analysis in the computation of the optical flow within a sequence of camera image data in order to identify within two image data sets i(20) and j(21) image points (pixels) u_iv_i u_jv_j corresponding with each other, the correspondence analysis comprising:

in a first step, transforming the image data set i with a signature operator whereby ~~in such a manner, that~~ for each pixel u_iv_i a signature string (27) is computed and recorded in a signature table (22) together with the pixel coordinates[[,]] ;

in a subsequent step, transforming each pixel u_jv_j of the other image data set j using the same signature operator, whereupon the resulting signature strings are recorded together with the respective pixel coordinates in an additional signature table (23) [[,]] ;

checking the entries in the two signature tables (22, 23) with respect to whether signature strings exist which can be found in both tables[[,]] ;

~~and in these cases,~~ for corresponding signature strings found on both tables (22, 23), generating a correspondence hypothesis (25) for the coordinates associated with the signature strings (27)) [[,]] with the initial presumption that when corresponding signature strings (27) found on both signature tables (22, 23) the respective image points of the image pairs correspond to images of the same object or part thereof; and

storing the correspondence hypothesis (25) in a hypothesis list (26) for further processing.